# WHAT IS CLAIMED IS:

1. An antimicrobial/fragrance composition capable of eliminating one or more microorganisms from a solid or semi-solid surface or three-space inhabited by said
5 microorganisms consisting essentially of:

  (a) salicylaldehyde; and

  (b) at least one organoleptically-compatible antimicrobial synergism cofactor
10   substance with the weight ratio of salicylaldehyde:cofactor substance being from about 1:10 up to about 10:1; the degree of synergism in the mixture being defined according to the IFF Antimicrobial Synergism Test, wherein the difference between the actual and expected antimicrobial values of the mixture is greater than or equal to a multiple of π and the expected antimicrobial
15   value of the mixture and wherein π is a value of from about 0.01 up to about 0.10.
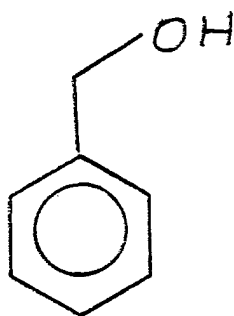
2. The composition of Claim 1 wherein the cofactor substance is selected from the group consisting of:
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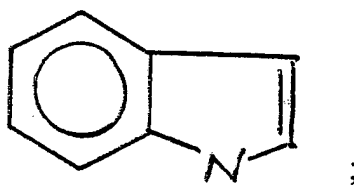 (i) at least one phenolic compound having the structure:
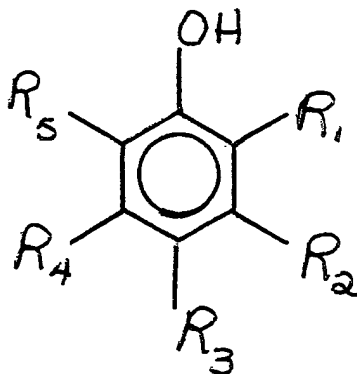
wherein one or two of R_1, R_2, R_3, R_4 and R_5 is the same or different C_1-C_3 alkyl and the other of R_1, R_2, R_3, R_4 and R_5 is hydrogen;
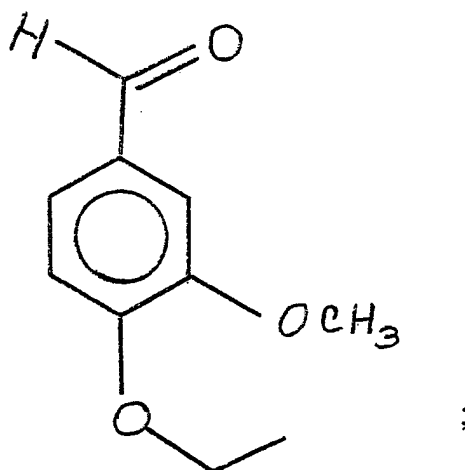
(ii) benzyl alcohol having the structure:
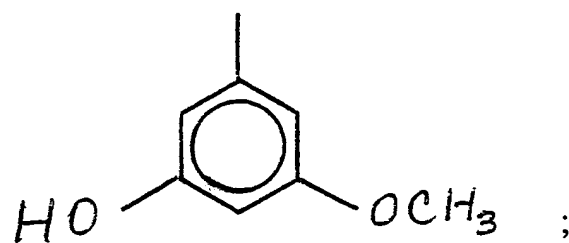
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;

(iii) indole having the structure:
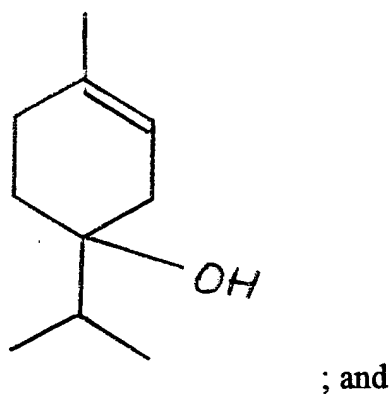
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;

(iv) ethyl vanillin having the structure:

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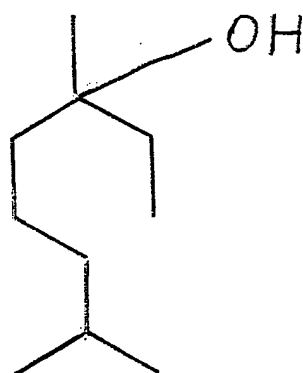25

;

(v)   orcinyl methyl ether having the structure:

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;

(vi)   terpinenol-4 having the structure:

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; and

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(vii)   tetrahydrolinalool having the structure:

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3. The composition of Claim 1 which is a broad spectrum antimicrobial/fragrance formulation capable of eliminating the microorganisms:

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Escherichia coli;

Enterococcus hirae;

Pseudomonas aeruginosa;

Staphylococcus aureus; and

Saccharomyces cerevisae.

10 from a solid or semi-solid surface or a three-space inhabited by said microorganisms wherein the cofactor substance is selected from the group consisting of:

(i) benzyl alcohol;

(ii) indole;

15 (iii) ethyl vanillin; and

(iv) terpinenol-4.

4. The composition of Claim 1 capable of eliminating the microorganisms:

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Escherichia coli;

Pseudomonas aeruginosa;

Staphylococcus aureus; and

Saccharomyces cerevisae.

25 from a solid or semi-solid surface or a three-space inhabited by said microorganisms wherein the cofactor substance is indole.

5. The composition of Claim 1 capable of eliminating the microorganism, *Saccharomyces cerevisae* wherein the cofactor substance is thymol having the structure:

6.   The composition of Claim 1 capable of eliminating the microorganisms:

Pseudomonas aeruginosa;

Staphylococcus aureus; and

Saccharomyces cerevisae.

from a solid or semi-solid surface or a three-space inhabited by said microorganisms wherein the cofactor substance is p-cresol having the structure:

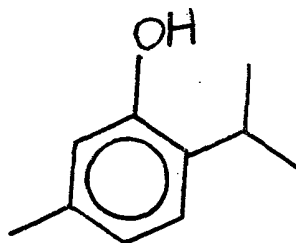7.   The composition of Claim 1 capable of eliminating the microorganisms:

Staphylococcus aureus; and

Saccharomyces cerevisae

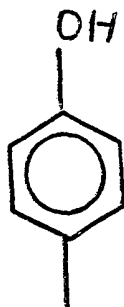from a solid or semi-solid surface or three-space inhabited by said microorganisms wherein the cofactor substance is carvacrol having the structure:
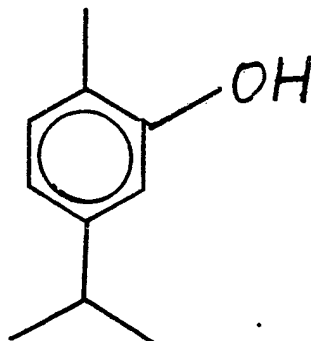
8.   The composition of Claim 1 capable of eliminating the microorganisms:

Staphylococcus aureus; and

Saccharomyces cerevisae

from a solid or semi-solid surface or three-space inhabited by said microorganisms wherein the cofactor substance is a 1:1:1 mixture of p-cresol:thymol:carvacrol.

9.   The composition of Claim 1 capable of eliminating the microorganism, *Escherichia coli*, from a solid or semi-solid surface or three-space inhabited by said *Escherichia coli* wherein the cofactor substance is tetrahydrolinalool having the structure:

10.   The composition of Claim 1 capable of eliminating the microorgisms:

Escherichia coli;

Enterococcus hirae;

Staphylococcus aureus; and

Saccharomyces cerevisae

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from a solid or semi-solid surface or a three-space inhabited by said microorganisms wherein the cofactor substance is carvacrol having the structure:
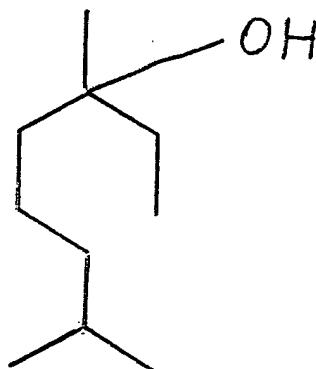
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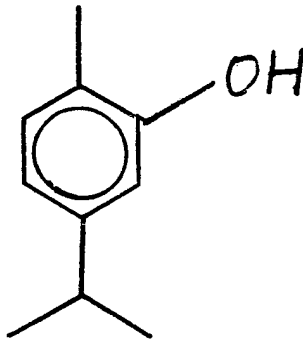
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and the weight ratio of carvacrol:salicylaldehyde is 1:1.

11.   A process for eliminating at least one microorganism selected from the group consisting of:

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Escherichia coli;

Enterococcus hirae;

Pseudomonas aeruginosa;

Staphylococcus aureus; and

25   *Saccharomyces cerevisae*

from a solid or semi-solid surface or a three-space inhabited by said microorganisms comprising the step of applying to said surface or three-space a microorganism-eliminating concentration and quantity of the composition of matter defined according to Claim 1.

12.   A process for augmenting or enhancing the aroma of a consumable material selected from the group consisting of perfume compositions, colognes and perfumed articles while simultaneously imparting thereto antimicrobial properties comprising the step of intimately admixing a consumable material base with (i) an antimicrobial-imparting quantity

5   and concentration of the composition of Claim 1 and (ii) an aroma-imparting concentration and quantity of an organoleptically-compatible perfume composition, organoleptically-compatible with said antimicrobial-imparting composition.

13.   A process for eliminating at least one microorganism selected from the group

10   consisting of:

        Escherichia coli;

        Enterococcus hirae;

        Pseudomonas aeruginosa;

15   *Staphylococcus aureus*; and

        Saccharomyces cerevisae

from a solid or semi-solid surface or a three-space inhabited by said microorganisms comprising the step of applying to said surface or three-space a microorganism-eliminating

20   concentration and quantity of the composition of matter defined according to Claim 3.

14.   A process for eliminating at least one microorganism selected from the group consisting of:
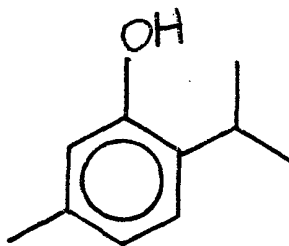
25   *Escherichia coli*;

        Enterococcus hirae;

        Staphylococcus aureus; and

        Saccharomyces cerevisae

from a solid or semi-solid surface or a three-space inhabited by said microorganisms comprising the step of applying to said surface or three-space a microorganism-eliminating concentration and quantity of the composition of matter defined according to Claim 4.

5   15.   A process for eliminating the microorganism, *Saccharomyces cerevisae*, from a solid or semi-solid surface or a three-space inhabited by said *Saccharomyces cerevisae* comprising the step of applying to said surface or three-space a *Saccharomyces cerevisae*-eliminating concentration and quantity of thymol having the structure:

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15   16.   A process for eliminating at least one microorganism selected from the group consisting of:

Pseudomonas aeruginosa;

Staphylococcus aureus; and

20   *Saccharomyces cerevisae*

from a solid or semi-solid surface or a three-space inhabited by said microorganisms comprising the step of applying to said surface or three-space a microorganism-eliminating concentration and quantity of p-cresol having the structure:
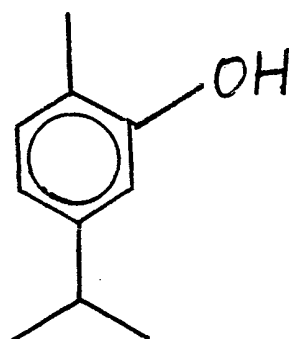
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17.   A process for eliminating at least one microorganism selected from the group consisting of:

        Staphylococcus aureus; and
5   *Saccharomyces cerevisae*

from a solid or semi-solid surface or a three-space inhabited by said microorganisms comprising the step of applying to said surface or three-space a microorganism-eliminating concentration and quantity of the composition of matter defined according to Claim 7
10   containing carvacrol having the structure:

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18.   A process for eliminating at least one microorganism selected from the group
20   consisting of:

        Staphylococcus aureus; and
        Saccharomyces cerevisae

25   from a solid or semi-solid surface or a three-space inhabited by said microorganisms comprising the step of applying to said surface or three-space a microorganism-eliminating concentration and quantity of the composition defined according to Claim 8.

19.   A process for eliminating *Escherichia coli* from a solid or semi-solid surface or a three-space inhabited by said *Escherichia coli* comprising the step of applying to said surface or three-space an *Escherichia coli*-eliminating concentration and quantity of the composition defined according to Claim 9 comprising tetrahydrolinalool and salicylaldehyde.

20.   A process for eliminating at least one microorganism selected from the group consisting of:

Escherichia coli;

Enterococcus hirae;

Staphylococcus aureus; and

Saccharomyces cerevisae

from a solid or semi-solid surface or a three-space inhabited by said microorganisms comprising the step of applying to said surface or three-space a microorganism-eliminating concentration and quantity of the composition defined according to Claim 10 containing salicylaldehyde and p-cresol in the weight ratio of 1:1.

21.   The process of Claim 12 wherein the consumable material is a solid or liquid anionic, cationic, nonionic or zwitterionic detergent composition or soap.

22.   Means for creation of electronic data processing software designed to yield information for indication of antimicrobial synergism for a fragance-antimicrobial formulation comprising:

(a)   means for ascertainment of specific antimicrobial-fragrance components, which individually eliminate given microorganisms on a solid or semi-solid surface and/or in a three-space inhabited by said microorganisms measured by

δ_{A_i} and δ_{B_i}, dimensions of antimicrobial inhibition areas with associated data input to memory;

(b) means for formulating one or more mixtures of said specific antimicrobial-fragrance components of (a) having weight fractions or mole fractions of components, f_{i_A} and f_{i_B}, with associated data input to memory;

(c) means for ascertainment of data indicative of antimicrobial activity of the mixtures of (b), Δ_A, with associated data input to memory, $\left[\Delta_A - \Delta_E \right]$ being the actual dimension of antimicrobial inhibition of a given area or volume;

(d) means for calculation of the expected value, Δ_E, of antimicrobial activity of the mixtures of (b) using the inputted, stored memory data of (a) [δ_{A_i} and δ_{B_i}] and [f_{i_A} and f_{i_B}] wherein the term, Δ_E, is a measure of the expected value of the dimension of the zone of antimicrobial inhibition,

according to the algorithm: $\Delta_E = \sum \delta_{A_i} f_{i_A} + \sum \delta_{B_i} f_{i_B}$; and the

terms, δ_{A_i} and δ_{B_i}, are measures of the dimensions of zones of antimicrobial inhibition for each of the components of the mixture in pure

form; and wherein, f_{i_A} and f_{i_B}, are measures of the mole fractions or weight fractions of each of the components in the mixture;

(e) means for storing in server memory the data required for calculation of k, the IFF Antimicrobial/Olfactory Synergism Test Constant, which is the product of π, a preselected confidence interval fraction varying from 0.01 up to 0.1 and Δ_E;

(f) means for ascertainment of the difference, $\left[\Delta_A - \Delta_E\right]$, and the product, $K = \left(\Delta_E\right)\pi$, with associated data input to server memory;

(g) means for instructing the setting of a system to accept a formulation in the event of:

$$\Delta_A - \Delta_E \geq K \quad \text{or} \quad \lambda > 0$$

and reject a formulation in the event of: $\lambda \leq 0$, wherein λ, the measure of degree of synergism, is defined thusly:

$$\lambda = \left\{\left[\Delta_A - \Delta_E\right] - K\right\}; \text{and}$$

(h) means for instructing the repetition of steps (a) through (g), inclusive, in the event of a result of $\lambda \leq 0$.

23.　A perfumed/antimicrobial property-imparting polymer comprising at least one microporous polymer and intimately admixed therewith in the pores thereof at least one composition defined according to Claim 1.

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24.　A perfumed/antimicrobial property-imparting polymer comprising at least one microporous polymer and intimately admixed therewith in the pores thereof at least one composition defined according to Claim 2.

25.　A perfumed/antimicrobial property-imparting polymer comprising at least one

10　microporous polymer and intimately admixed therewith in the pores thereof at least one composition defined according to Claim 3.

26.　A perfumed/antimicrobial property-imparting polymer comprising at least one microporous polymer and intimately admixed therewith in the pores thereof at least one

15　composition defined according to Claim 4.

27.　A perfumed/antimicrobial property-imparting polymer comprising at least one microporous polymer and intimately admixed therewith in the pores thereof at least one composition defined according to Claim 5.

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28.　A perfumed/antimicrobial property-imparting polymer comprising at least one microporous polymer and intimately admixed therewith in the pores thereof at least one composition defined according to Claim 6.

25　29.　A perfumed/antimicrobial property-imparting polymer comprising at least one microporous polymer and intimately admixed therewith in the pores thereof at least one composition defined according to Claim 7.

30.   A perfumed/antimicrobial property-imparting polymer comprising at least one microporous polymer and intimately admixed therewith in the pores thereof at least one composition defined according to Claim 8.

5   31.   A perfumed/antimicrobial property-imparting polymer comprising at least one microporous polymer and intimately admixed therewith in the pores thereof at least one composition defined according to Claim 9.

        32.   A perfumed/antimicrobial property-imparting polymer comprising at least one

10   microporous polymer and intimately admixed therewith in the pores thereof at least one composition defined according to Claim 10.